

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Canceled)

Claim 2 (Currently amended): ~~The wireless communication apparatus according to claim 1, further comprising:~~ A wireless communication apparatus for conducting wireless communications according to a time division duplex (TDD) system, comprising:

a plurality of antennas;

a transmission circuit for transferring a transmission signal to the plurality of antennas;

a reception circuit for transferring a reception signal from the plurality of antennas;

a channel estimation unit which detects channel information using the reception signal from the reception circuit;

a correction value detection unit which detects a correction value for correcting deviation occurring between the transmission circuit and the reception circuit using the channel information from the channel estimation unit,

wherein the correction value detection unit detects the correction value using a correction signal transmitted from a second wireless communication apparatus with which the wireless communication apparatus conducts communications;

a reception weight generation unit which generates reception weight using the channel information from the channel estimation unit;

a reception signal weighting and combining unit which weights a plurality of reception signals from the reception circuit using the reception weight and combines the signals;

a transmission weight generation unit which generates transmission weight using the reception weight and the correction value from the correction value detection unit; and

a transmission signal weighting unit which weights transmission data using the transmission weight.

Claim 3 (Currently amended): ~~The wireless communication apparatus according to claim 1, further comprising:~~ A wireless communication apparatus for conducting wireless communications according to a time division duplex (TDD) system, comprising:

a plurality of antennas;

a transmission circuit for transferring a transmission signal to the plurality of antennas;

a reception circuit for transferring a reception signal from the plurality of antennas;

a channel estimation unit which detects channel information using the reception signal from the reception circuit;

a correction value detection unit which detects a correction value for correcting deviation occurring between the transmission circuit and the reception circuit using the channel information from the channel estimation unit,

wherein the correction value detection unit detects the correction value using a correction signal transmitted from a second wireless communication apparatus with which the wireless communication apparatus conducts communications; and

an already known signal transmission unit which transmits an already known signal to the wireless communication apparatus communicating with the second wireless communication apparatus,

wherein the correction value detection unit detects the correction value for correcting deviation occurring between the transmission and reception circuits connected to each antenna from the correction signal transmitted from the second wireless communication apparatus with which the wireless communication apparatus conducts communications and received by the wireless communication apparatus.

Claim 4 (Previously presented): The second wireless communication apparatus for conducting wireless communications with the wireless communication apparatus according to claim 3, comprising:

a plurality of antennas;
a transmission circuit for transferring a transmission signal to the plurality of antennas;
a reception circuit for transferring a reception signal from the plurality of antennas;
a channel estimation unit which estimates a channel estimation value based on a received already known signal;
a correction signal generation unit which generates a correction signal based on the channel estimation value; and
a correction signal transmission unit which transmits the generated correction signal.

Claim 5 (Previously presented): The second wireless communication apparatus according to claim 4,

wherein the correction signal generation unit means generates the correction signal which becomes a reciprocal of the channel estimation value.

Claim 6 (Previously presented): The second wireless communication apparatus according to claim 4,

wherein the correction signal generation unit decomposes the channel estimation value into singular values and generates the correction signal using the result.

Claim 7 (Previously presented): The wireless communication apparatus according to claim 3, further comprising:

a distribution unit which distributes a part of the transmission signal from the transmission unit;

a switch unit which is connected so as to transfer the transmission signal distributed by the distribution unit to the reception circuit; and

an amplitude deviation correction value detection unit which detects an amplitude deviation correction value for correcting amplitude deviation changing as the signal before transferred through the transmission circuit and the signal after transferred through the reception circuit are input and are transferred through the transmission circuit or the reception circuit.

Claim 8 (Previously presented): The wireless communication apparatus according to claim 7,

wherein the switch unit switches so as to transfer a part of the transmission signal distributed by the distribution unit to the reception circuit at the transmission timing in the time division duplex system and so as not to transfer a part of the transmission signal distributed by the distribution unit to the reception circuit at the reception timing in the time division duplex system.

Claim 9 (Previously presented): The second wireless communication apparatus according to claim 4,

wherein the correction signal generation unit generates the correction signal so as to correct phase rotation of the channel estimation value.